

Name.....stream.....

545/1

CHEMISTRY (Theory)

CHEMISTRY

Paper 1

SECTION A

Item 1

A group of learners were faced with a unique solid X which they suspected to be an element. One of them picked interest in what could be the chemical formula of the oxide of the element. However he did not know how to determine the formula. When they contacted the laboratory technician he gave them the atomic number and mass number of X as 12 and 24 respectively, and the symbolic representation of oxygen as ${}_8^{16}\text{O}$.

Task

As a chemistry learner

(a) Explain ;

(i) The nature of substance X

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(ii) Determine the formula of oxide of X.

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(b) State the suitability of substance X.

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(c) Advise the learner on the environmental impacts of X.

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SECTION B

Part 1

Item 2

Air is a mixture of different components. It contains 21% oxygen. Due to a wide spread of respiratory illnesses caused by COVID-19, there was an increased demand for oxygen by patients in hospitals. The government supply of oxygen is not enough and is planning to set up an oxygen production plant with minimal environmental impact.

However, the science club members in your school would like to know how the production process will be carried out.

Task;

As a chemistry learner, prepare a write up you will use during the presentation.

PART II

Item 3.

During her school holidays, Eva visited her aunt who works at a stone quarry. She noticed that explosives were being used to blast big rocks to form small stones and there was a lot of dust rising into the air. Besides the social benefits, Eva was concerned about what would happen to the site and the community if the activity continued over time..

Task;

As chemistry learner, make a write-up to respond to Eva's concern.

STRIVE FOR EXCELLENCE

